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AMSAT NEWS SERVICE
ANS-043

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-043 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 043.01
>From AMSAT HQ KENSINGTON, MD.
February 12, 2017
To All RADIO AMATEURS
BID: $ANS-043.01

SSTV From The ISS February 13-14

An MAI-75 Experiment SSTV event is planned to begin on Monday, Feb. 13 from 09:25-18:00 UTC and Tuesday, Feb. 14 from 11:25-16:30 UTC. The downlink frequency is expected to be 145.800 MHz and the transmission mode is expected to be PD180. This opportunity should cover most of the world during the operational period.

The MAI-75 experiment uses a notebook computer on the ISS Russian Segment, which stores images that are then transmitted to Earth using the ham radio, specifically the onboard Kenwood TM D710E transceiver. Images received can be posted and viewed at https://ariss-sstv.blogspot.com/

Please note that the event, and any ARISS event, is dependent on other activities, schedules and crew responsibilities on the ISS and are subject to change at any time.

While preparations are being finalized please check for new and the most current information on the AMSAT.org and ARISS.org websites, the AMSAT-BB(a)amsat.org, the ARISS facebook at Amateur Radio On The International Space Station (ARISS) and ARISS twitter @ARISS_status for the latest information on this event.

[ANS thanks ARISS for the above information]

K5T Grid Expedition to DL88jx

Several satellite operators will make their way down to the southernmost tip of Texas' "Big Bend" on Sunday, February 12, 2017. Operating from within Big Bend National Park's Talley Campground via amateur satellites, grid chasers will have a shot at the ellusive DL88jx for a period of roughly 18 hours.

Listen for K5T on FM and SSB satellites starting roughly at 21:00 UTC on February 12 through 15:00 UTC on February 13. ISS packet is possible but not planned. You may occasionally catch K5T in grid square DL89. Pass/schedule requests will not be honored on this trip. Some HF operation may occur.

Paper QSL with SASE via W5PFG or LoTW with the callsign "K5T."

[ANS thanks Clayton W5PFG for the above Information]

Great STEM Lesson Idea

Dave Ryan, EI4HT/M0GIW, has posted an excellent video of a project he devised with his daught Erin.
Dave and his daughter downloaded the list of questions for the ARISS QSO between Astronaut Shane Kimbrough and South Street School, Danbury, Connecticut USA. He and Erin researched the questions and made a list of projected answers for them. The contact was made with ON4ISS, an ARISS telebridge station in Belgium, and Erin and Dave were able to listen to the transmission live from from their QTH in South Yorkshire, UK. Dave videotaped the QSO and posted it online at: https://www.youtube.com/watch?v=MzQbyIH8Qwg

This is an excellent example of how to integrate Amateur Radio and the the ISS without being directly part of an ARISS contact. The examples can be used with any demo or within a planned classroom setting. This is a great example of how to introduce a STEM related activity and create an interest in the hobby at the same time.

[ANS thanks Dave EI4HT/M0GIW and Erin for the above information]

Donations for AMSAT SA Kletskous CubeSat

Two companies, RS Components and Trax Interconnect, have made major contributions to AMSAT SA's Kletskous CubeSat. RS Components have supplied components for the next generation Electronic Power Supply system (EPS) and the controller board. Trax Interconnect supplied the PC Boards for the EPS, the controller board and the magnetic stabilisation system. Their support for amateur radio and amateur radio satellites is much appreciated.

[ANS thanks the SARL weekly news in English 2017-2-4 for the above information]

2017 Teachers Institute Schedule Announced

ARRL has announced the 2017 schedule for our Teachers Institute on Wireless Technology. We want you to be among the first to receive this information. If you are an ARRL member you'll see an article about the Teachers Institute in the March issue of QST. You will also see an announcement in our next issue Radio Waves.

If you are a past participant of the Teachers Institute we hope that you have found many ways to use the ideas, training and resources you received and are interested in spreading the word to other teachers. You may want to consider signing up for the advanced TI-2 on Remote Sensing and Data Gathering.

You are probably in the best position to know where to circulate information about this opportunity within your school district. A listing on your school or school district website? A newsletter? A web page for science and technology teachers? Word of mouth to teachers in your circle? We'd like to get the word out to reach teachers who can make use of this opportunity.

If you would like to receive copies of our printed brochures please send your request and your mailing address to etp(a)arrl.org.

Here's some copy you can use to announce the opportunity in your school community:

Integrate STEM by Exploring Wireless Technology

ARRL, the national association for Amateur Radio, has just announced the schedule for two sessions of its Introductory Teachers Institute on Wireless Technology (TI-1) to be offered during the summer of 2017. The ARRL Teachers Institute is an expenses paid, intensive professional development opportunity for educators who want to receive training and resources to explore wireless technology in the classroom. Topics at the TI-1 Introduction to Wireless Technology, include basic electronics, radio science, microcontroller programming and basic robotics. ARRL will also offer an advanced Teachers Institute (TI-2) on Remote Sensing and Data Gathering. This linked article from the March issue of ARRL's journal, QST, includes the schedule and description of offerings this summer.

Please visit the ARRL website at: www.arrl.org/ti for more details and to download an application. Watch this video for an inside look at the Teachers Institute!
Application deadline is May 1.

[ANS thanks Debra K1DMJ and the ARRL for the above information]

University CubeSat Opportunity

The UK Space Agency is encouraging university students to take advantage of a new opportunity to build and test their own CubeSats

The aim of the The Fly Your Satellite! program is to support university student teams with educational CubeSats throughout the assembly, integration, testing, and verification process. By participating in the programme, students will implement standard practices for spacecraft development; receive support from experienced ESA specialists; attend tailored training courses; and will be offered access to state-of-the-art test facilities.

ESA say only launch opportunities from the International Space Station (ISS) are envisioned, and CubeSat teams applying need to ensure that their mission complies with a deployment to orbit from the ISS.

Further information at
http://tinyurl.com/ANS043-UnivCubesats

UK Space Agency
https://twitter.com/spacegovuk

[ANS thanks ESA via Southgate ARN for the above information]

Nayif-1 CubeSat Launch Announced

AMSAT-UK and AMSAT-NL are delighted to now be able to confirm that the Nayif-1 1U CubeSat, which has a full FUNcube payload, is now scheduled for launch on an Indian PSLV launch vehicle at 03:58 UT on February 15, 2017. The flight, C-37, will be carry a total of 104 satellites into orbit.

Nayif-1 has been developed by the Mohammed bin Rashid Space Centre (MBRSC) and American University of Sharjah (AUS). The UAE’s first Nanosatellite was developed by Emirati engineering students from AUS under the supervision of a team of engineers and specialists from MBRSC within the framework of a partnership between the two entities, aiming to provide hands-on experience to engineering students on satellite manufacturing.

The spacecraft includes a U/V linear transponder and telemetry transmitter. It employs enhanced oscillator circuitry and includes an active attitude determination and control system.

As with previous missions carrying FUNcube payloads, AMSAT-UK would very much like to receive as many reports from stations around the world, especially during the first few minutes and hours after launch. We expect that the first signals may be heard in North America during the mid evening hours (local time) on Feb 14.

There is a mission specific Telemetry Dashboard for this project and this can be downloaded from:

http://download.funcube.org.uk/Nayif-1_Dashboard_1038_installer.msi

and, in a similar way to the FUNcube-1 Dashboard, this will be capable of uploading the telemetry received to a central Data Warehouse.

Guidance Notes for the installation of the Dashboard, integration with a FUNcube Dongle and the Data Warehouse have been prepared for the Nayif-1 mission. These can be downloaded from:

http://tinyurl.com/ANS043-Nayif-1-Dashboard

A file to test that the Dashboard and Warehouse configuration are working correctly can be downloaded from:
http://download.funcube.org.uk/nayif1_testfile.funcubebin

The operating frequencies for the spacecraft will be:

Telemetry
145.940 MHz using 1k2 BPSK to the FUNcube standard.

SSB/CW Transponder
Uplink on 435.045 – 435.015 MHz
Downlink on 145.960 – 145.990 MHz

Initial operations of the spacecraft will be in a low power “safe” mode where only the telemetry transmitter is activated.

More details about the launch, exact deployment time and pre-launch TLE’s will be made available as soon as they become available; in the meantime we will really appreciate your support!

[ANS thanks AMSAT-UK for the above information]

Nayif-1 UPDATE Pre-launch Keps and more details

The launch time for the Nayif-1 CubeSat has been confirmed as 03:58UTC on February 15th 2017 on the PSLV C37 vehicle and a set of pre-launch TLEs have now been released:

NAYIF

1 17002U 17002A   17046.17824931 0.00000000 00000-0 00000-0 0 9993
2 17002 97.5521 107.5843 0004848 278.6481 296.8511 15.21991390   01

This file can also been downloaded from here
http://download.funcube.org.uk/nayif_tle.txt

We expect that the FUNcube transmitter on Nayif-1 will activate at approximately 05:06UTC, but the exact timing is still to be confirmed! Initial transmissions will be in “safe” mode and will be of the 1k2 BPSK telemetry only with approx 50mW of RF power. If the predictions are correct, the spacecraft will be heading north over Mexico and the western parts of the US and Canada.

During the Launch and Early Operation phase (LEOP) of the mission, the Nayif-1 command team will be headquartered at the American University of Sharjah Ground station in the United Arab Emirates. They will obviously be especially keen to have all possible reports

of signal reception during this first orbit! To encourage everyone to take part, there will be a small prize for the station that submits the first data to the Nayif-1 Data Warehouse and perhaps an extra reward if they manage to receive the very first frame transmitted by the spacecraft! This should have the sequence number 5471 or 5472.

Details of the Nayif-1 frequencies, together with details of how to the download the Dashboard can be found here

https://funcube.org.uk/2017/02/08/nayif-1-launch-date-now-confirmed/

The Data Warehouse is still under final development but a preview can be seen here: http://data.amsat-uk.org/nayif1/index

Please note that if you are already a registered user of the FUNcube Dashboard then you do not need to re-register. Your existing details will transfer automatically to the new Dashboard when you run it for the first time.

If you run the test file with the Nayif-1 Dashboard please do not expect the Warehouse to show the data - it is from an earlier date than that is already displayed. However the “packets uploaded” tab at the bottom right corner of your Dashboard will show that the files have uploaded OK, that all is well with your system and that it is ready for action.

We are hoping that the actual launch will be webstreamed and details of this will be made available as soon as possible. The AMSAT-UK and -NL team will also be using the #funcube IRC channel
on launch day and you will be very welcome to join them there. If you do not have the Dashboard available then please submit your heard reports here. A web client can be found at
http://irc.lc/freenode/funcube if you do not have an IRC client installed.

[ANS thanks Graham G3VZV for the above information]

UT1FG/MM QSL Procedure for this season

As you may know Yuri, UT1FG, prefers to do his own QSLs to the extent possible. He has asked me to help funnel QSL requests to him while he is at sea so that he can process them and mail them from ports as he travels. Yuri does not process qsl requests when he is not on a ship.

The following procedure only applies to contacts made during this season from the M/V Chestnut. Previous seasons will be handled by his manager Eugene, UX0FY. Eugene has all the logs for previous seasons and can be contacted through his qrz.com email address. Please contact Eugene before sending anything in the mail to him and ask for instructions on how to proceed.

You may prepare a logsheet of QSO's that Yuri can print, verify, sign and mail from one of his destination ports. An example of a suitable logsheet can be found at papays.com/sat under the UT1FG/MM QSL Instructions link at the top of the page.

Please use the following conventions when preparing the logsheet:

1. List only one contact per grid.

2. Only request confirmations of NEW Grids.
3. Use Excel or a similar program to create the logsheet.
4. Save the Logsheet to a .pdf If your program cannot save to a .pdf, download a free program like Bullzip that will install a .pdf printer that you can print to and create a .pdf file.
5. Each page should stand alone; there should be a place for Yuri's signature on each page.
6. Incude your COMPLETE Mailing Address on each page.
7. Name the logsheet file with this format: Yourcall_UT1FG_DateLastQSO for example: DJ8MS_UT1FG_10Feb2017.pdf
8. Email your file as an attachment to: k8yse at papays.com with the subject line the same as the .pdf file name: DJ8MS_UT1FG_10Feb2017
10. Please be sure to follow the example on the website papays.com/sat/ut1fgqsl.html Consistency will help Yuri process requests more efficiently.
11. If there are qso's on your list that are not in the log, Yuri will draw a line through them and initial.

I will send an acknowledgement email when I receive a request. This way you will know that Yuri will have your logsheet.

If Yuri tells me that he has mailed your logsheet, I will post that information on the bulletin boards.

Yuri's time when nearing or in port is very limited. He has a lot of responsibilities to carry out and large amounts of paper to process along with requests from his Company. He has more time when he is sailing. Let that guide you when deciding when you email your requests. A good time to mail your request is when Yuri is about 5 days from making port. Follow him at marinetraffic.com (M/V Chestnut - bulk Cargo).

This new procedure may be changed or stopped depending on how it goes. Hopefully this will work well and Yuri will find it acceptable.

We are very fortunate that Yuri operates from so many water grids that otherwise would never be on the satellites. His passion for satellites is amazing. Have fun working him.

[ANS thanks John K8YSE for the above information]

Live HAMTV Video Planned for ARISS Contact

The HAMTV experiment is planned transmit live video during the ARISS contact with Collège André Malraux, Chatelaillon-Plage, France on Mon 2017-02-13 14:00:35 UTC.

The HAMTV video downlink is on 2395 MHz (DVB-S,SR2000,fec 1/2, PID video 256, PID audio 257, Mp eg2 codec). Audio will be on 70cm.

The video will be streamed on-line at: https://hamtv.batc.tv/live/

Additional streaming from other ground stations will be at: http://www.batc.tv/iss/

[ANS thanks Jean-Pierre, F6DZP and the HAMTV yahoogroups
e-mail list for the above information]

ARISS News

+ A Successful contact was made between Space Exploration Educators
  Conference, Houston, Texas, and Astronaut Thomas Pesquet KG5FYG
  using Callsign NA1SS. The contact began Thu 2017-02-09 20:30:10 UTC
  and lasted about nine and a half minutes. Contact was Telebridge via
  K6DUE. ARISS Mentor was Frank KA3HDO.

+ A Successful contact was made between Palmetto Scholars Academy,
  North Charleston, SC, USA and Astronaut Shane Kimbrough KE5HOD using
  Callsign NA1SS. The contact began Fri 2017-02-10 17:59:18 UTC and
  lasted about nine and a half minutes. Contact was direct via K4PSA.
  ARISS Mentor was John K4SQC.

Upcoming ARISS Contact Schedule

Collège André Malraux, Chatelaillon-Plage, France, direct via F4KJT
The ISS callsign is presently scheduled to be FXØISS
The scheduled astronaut is Thomas Pesquet KG5FYG
Contact is a go for: Mon 2017-02-13 14:00:35 UTC

3rd Junior High School, Komotini, Greece, direct via SV7APQ
The ISS callsign is presently scheduled to be OR4ISS
The scheduled astronaut is Shane Kimbrough KE5HOD
Contact is a go for: Fri 2017-02-17 08:58:11 UTC

[ANS thanks ARISS, Charlie AJ9N and David AA4KN for the above
 information]

Satellite Shorts From All Over

+ The Smallsat Launcher War

  "Over the last decade or so the definition of what a ‘small
  satellite’ is has ballooned beyond the original cubesat design
  specification to satellites of 50 or 100 kg. Today a ‘smallsat’ is
  defined far more around the cost, and sometimes the technologies
  used, than the size and shape of the box that goes into orbit."

  Read the full story at:
  http://hackaday.com/2017/02/09/the-smallsat-launcher-war/

  [ANS thanks Hackaday.com for the above information and Bernhard
   VA6BMJ for bringing it to our attention]

+ NASA seeks partnerships with US companies to advance commercial
  space technologies

  NASA is seeking partnerships with U.S. companies focused on
  industry-developed space technologies that can advance the
  commercial space sector and benefit future NASA missions through
  the "Announcement of Collaborative Opportunity (ACO)" solicitation
  released by NASA's Space Technology Mission Directorate (STMD).

Read complete story at:
http://tinyurl.com/ANS043-NASAPartners

[ANS thanks spacedaily.com for the above information]

+ Smallsat Builders Admit a Little Bigger Might Be a Little Better

"What's the perfect size for a small satellite? "The answer is 42 kilograms," said Martin Sweeting, Surrey Satellite Technology Ltd. founder and executive chairman, at the Small Satellite Symposium Feb. 7 and 8."

See more at:
http://tinyurl.com/ANS043-SmallSatBuilders

[ANS thanks SpaceNews for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
EMike McCardel, AA8EM
aa8em at amsat dot org